

REMARKS

Claim 1, 3-15 and 17-29 are pending in the application. Claims 21-28 have been withdrawn. Claim 1 is herein amended. Claims 2 and 16 are herein cancelled. Claim 29 is herein added. No new matter has been added.

Support for newly added claim 29 may be found in the as-originally filed specification, for example see page 24, line 27 – page 25, line 19.

Claim Objections

Claim 2 was objected to due to an informality.

Claim 2 is herein cancelled. Thus, this objection is rendered moot.

Claim Rejections Based on Kanno et al.

Claims 1-20 were rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Kanno et al (US 2004/0106531) (hereinafter Kanno). Applicants respectfully traverse this rejection.

The presently claimed cleaning agent comprises [I] an organic acid having at least one carboxyl group, [II] a complexing agent, and [III] 0.05 to 40% by weight of an organic solvent selected from the group consisting of (1) monohydric alcohols, (2) alkoxyalcohols, (3) glycols, (4) glycol ethers, (5) ketones and (6) nitriles, and wherein pH of the cleaning agent is 0.5 to 6.5.

In contrast, a cleaning composition for removing resists, as disclosed in Kanno, comprises a salt of hydrofluoric acid and a base not containing a metal (A component), a water-soluble organic solvent (B1 component), at least one acid selected from a group consisting of organic acid and inorganic acid (C component) and water (D component), and having hydrogen

ion concentration (pH) of 4-8. Moreover, Kanno discloses that the content of a water soluble organic solvent is 50 mass % to 98 mass %. See Kanno, paragraphs [0046] and [0061].

In addition, Kanno discloses that if it is less than 50 mass %, removing efficiency of the resist film and the resist residue would be degraded and corrosion of the copper interconnection would become intense. See Kanno, paragraph [0046].

Thus, in the cleaning composition of Kanno for removing resists, the water soluble organic solvent of 50 mass % and more is necessary. That is, an essential feature of the cleaning composition of Kanno is that the water soluble organic solvent is 50 mass % to 98 mass %.

Kanno does not disclose, teach, suggest or provide any reason for achieving a cleaning agent as recited in the presently claimed composition. Moreover, a skilled artisan at the time of invention would clearly understand that the presently claimed composition is not rendered anticipated or obvious by Kanno. A skilled artisan would have no reason or motivation to achieve the presently claimed composition, including the weight of an organic solvent feature, based on the disclosure of Kanno.

That is, in the cleaning composition of Kanno content of a water soluble organic solvent is 50 to 98 mass %, whereas in the presently claimed composition, the content of an organic solvent is 0.05 to 40% by weight. This is at least one novel and unobvious feature of the presently claimed composition over the cited art.

Thus, presently claimed composition is novel and unobvious from the disclosure of Kanno.

In addition, the present specification discloses that when too much of the organic solvent is used, it disturbs a complexing agent, an organic acid, a surfactant or the like. Thus, the performance of the resulting cleaning agent may be diminished and one may not achieve the unexpected and superior cleaning properties of the presently claimed composition. That is, when too much of the organic solvent is used, there is a problem that the removal effect for metal impurities or particles is lowered. See present specification, paragraph [0055].

A feature of the presently claimed cleaning agent for a substrate is that the content of an organic solvent is 0.05 to 40% by weight.

Accordingly, Kanno teaches away from at least this feature of the presently claimed composition.

Accordingly, the presently claimed composition is novel and unobvious from the disclosure of Kanno. Favorable reconsideration is earnestly solicited.

Claim Rejections Based on Ikemoto et al.

Claims 1-15 and 17-20 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Ikemoto et al (US 2003/0181344) (hereinafter Ikemoto) and claim 16 was rejected under 35 U.S.C. §102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as allegedly being obvious over Ikemoto et al (US 2003/0181344) (hereinafter Ikemoto). Applicants respectfully traverse these rejections.

The presently claimed cleaning agent comprises [I] an organic acid having at least one carboxyl group, [II] a complexing agent, and [III] 0.05 to 40% by weight of an organic solvent

selected from the group consisting of (1) monohydric alcohols, (2) alkoxyalcohols, (3) glycols, (4) glycol ethers, (5) ketones and (6) nitriles, and wherein pH of the cleaning agent is 0.5 to 6.5.

In contrast, a photoresist stripping composition, as disclosed in Ikemoto, contains at least one oxymethylamine compound having an alkoxymethylamine structure or an alkoxymethylamine structure substituted by an ether linkage-containing substituent. See Ikemoto, claim 1.

Applicants respectfully assert that Ikemoto fails to disclose, teach, suggest or provide any reason to achieve at least two features of the presently claimed composition.

First, Ikemoto does not render anticipated and/or obvious the presently claimed cleaning agent for a substrate comprising [I] an acid selected from an organic acid having at least one carboxyl group [II] a complexing agent, and [III] an organic solvent.

In contrast, Ikemoto does not disclose a composition comprising each and every feature of the presently claimed composition, *i.e.*, components of [I], [II] and [III]. Moreover, a skilled artisan at the time of invention would have no reason or motivation to achieve the presently claimed composition comprising components of [I], [II] and [III] from Ikemoto.

Secondly, in the composition of Ikemoto, the pH is alkaline. However, a feature of the presently claimed cleaning agent is that the pH is 0.5 to 6.5. Thus, the presently claim cleaning agent is acidic. Therefore, Ikemoto does not anticipate and/or render obvious at least the pH feature of the presently claimed composition.

Though the disclosure of Ikemoto does not disclose a pH range, the oxymethylamine compound component of the composition of Ikemoto is an amine compound. See Ikemoto,

paragraph [0032]. Furthermore, the alkaline compound component and the oxymethylamine compound component of the composition of Ikemoto are contained in voluminous amounts in comparison with the acidic component of Ikemoto, such as citric acid. See disclosed examples of Ikemoto. Thus, Applicants hold that a skilled artisan at the time of invention would understand that the composition of Ikemoto is alkaline.

This is further evidenced by Example 16 of Ikemoto. Example 16 of Ikemoto discloses that while the content of citric acid (acidic component) is 2% by weight, the content of ethanolamine (alkaline compound) is 30% by weight. See Ikemoto, Table 2. Applicants respectfully hold that a skilled artisan at the time of invention would understand that the composition of Ikemoto is alkaline.

For at least these reasons, the presently claimed composition is not rendered anticipated and/or obvious by Ikemoto.

A feature of the presently claimed composition is that three components are present, *i.e.*, an organic acid, a complexing agent and an organic solvent. See present specification, paragraph [0054].

In the present specification, disclose examples 45, 53 and 65, establish that the removal effect of impurities, such as metallic impurities, by the presently claimed cleaning agent comprising the three components, an organic acid, a complexing agent and an organic solvent, achieves an unexpected result and superior removal of impurities than a composition merely comprising an organic acid or a complexing agent and an organic solvent

Ikemoto does not disclose, teach, suggest or provide any reason for achieving the presently claimed composition with its unexpected results and superior removal of impurities property.

For at least these reasons, the presently claimed composition is novel and unobvious over Ikemoto.

Favorable reconsideration is earnestly solicited.

In view of the above, Applicants respectfully submit that the claimed invention is allowable and ask that the rejections under 35 U.S.C. §102 and the rejection under 35 U.S.C. §103 be reconsidered and withdrawn. Applicants respectfully submit that this case is in condition for allowance and allowance is respectfully solicited.

If any points remain at issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the local exchange number listed below.

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Art Unit: 1796

Amendment
Attorney Docket No.: 062398

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP

/BERNADETTE K. MCGANN/

Bernadette K. McGann
Attorney for Applicants
Registration No. 65,127
Telephone: (202) 822-1100
Facsimile: (202) 822-1111

BKM/bam